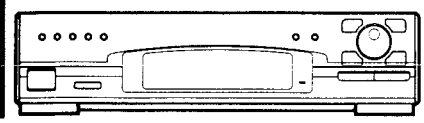
PIONEER
The Art of Entertainment

Service Manual



ORDER NO.
ARP2371

SOUND FIELD PROCESSOR

SP-J500

SP–J500 HAS THE FOLLOWING :

Type	Power Requirement	Remarks
HE	AC 220 V–230 V	
HB	AC 240 V	
SD	AC 110 V, 120 V–127 V, 220 V, 240 V(switchable)	
HEWZIW	AC 220 V–230 V	

This manual is applicable to HE, HB and SD types.

- **As to HB and SD types, refer to page 21.**
- **As to the other types, refer to applicable service manual.**
- **These products are components of systems. As to the system composition, refer to the system manuals.**
- **Each of these products does not function properly when independent ; to avoid malfunctions, be sure to connect it to the prescribed system components, otherwise damage may result.**

CONTENTS

1. PACKING 2
2. EXPLODED VIEWS AND PARTS LIST 3
3. SCHEMATIC DIAGRAMS AND PCB CONNECTIONS DIAGRAMS 6
4. PCB PARTS LIST 17
5. IC INFORMATION 20
6. FOR HB AND SD TYPES 21
7. PANEL FACILITIES 22
8. SPECIFICATIONS 23

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
PIONEER ELECTRONICS SERVICE INC. P.O. Box 1760, Long Beach, California 90801 U.S.A.
PIONEER ELECTRONICS OF CANADA, INC. 505 Cochrane Drive, Markham, Ontario L3R 8E3 Canada
PIONEER ELECTRONIC [EUROPE] N.V. Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia TEL: [03] 580-9911

© PIONEER ELECTRONIC CORPORATION 1992

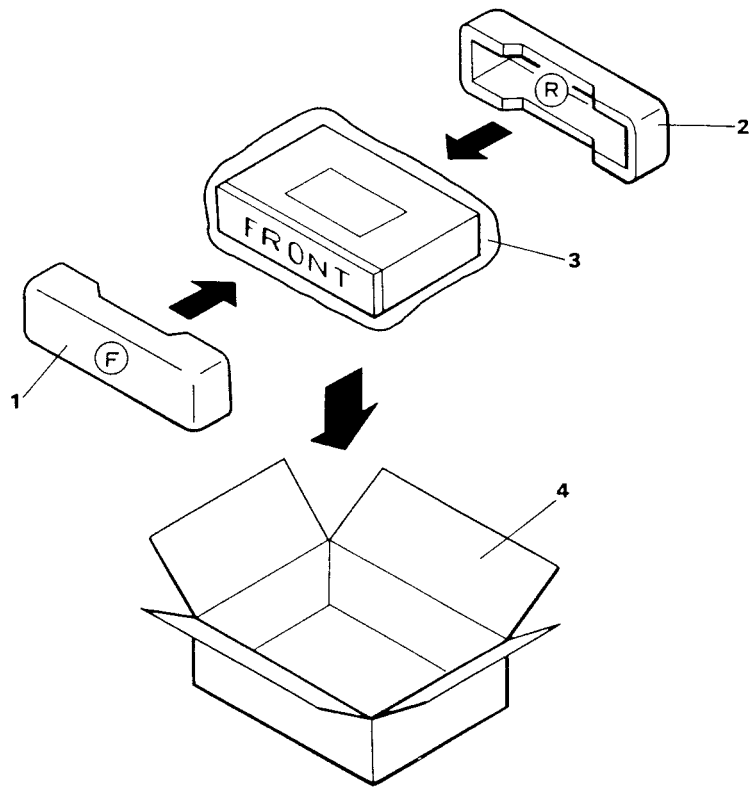
FF JAN. 1992 Printed in Japan

1. PACKING

NOTES :

- *The parts with an encircled number are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

Mark	No.	Description	Parts No.
	1	FRONT PAD	AHA1469
	2	REAR PAD	AHA1470
	3	PACKING SHEET	AHG1017
	4	PACKING CASE	AHD2200



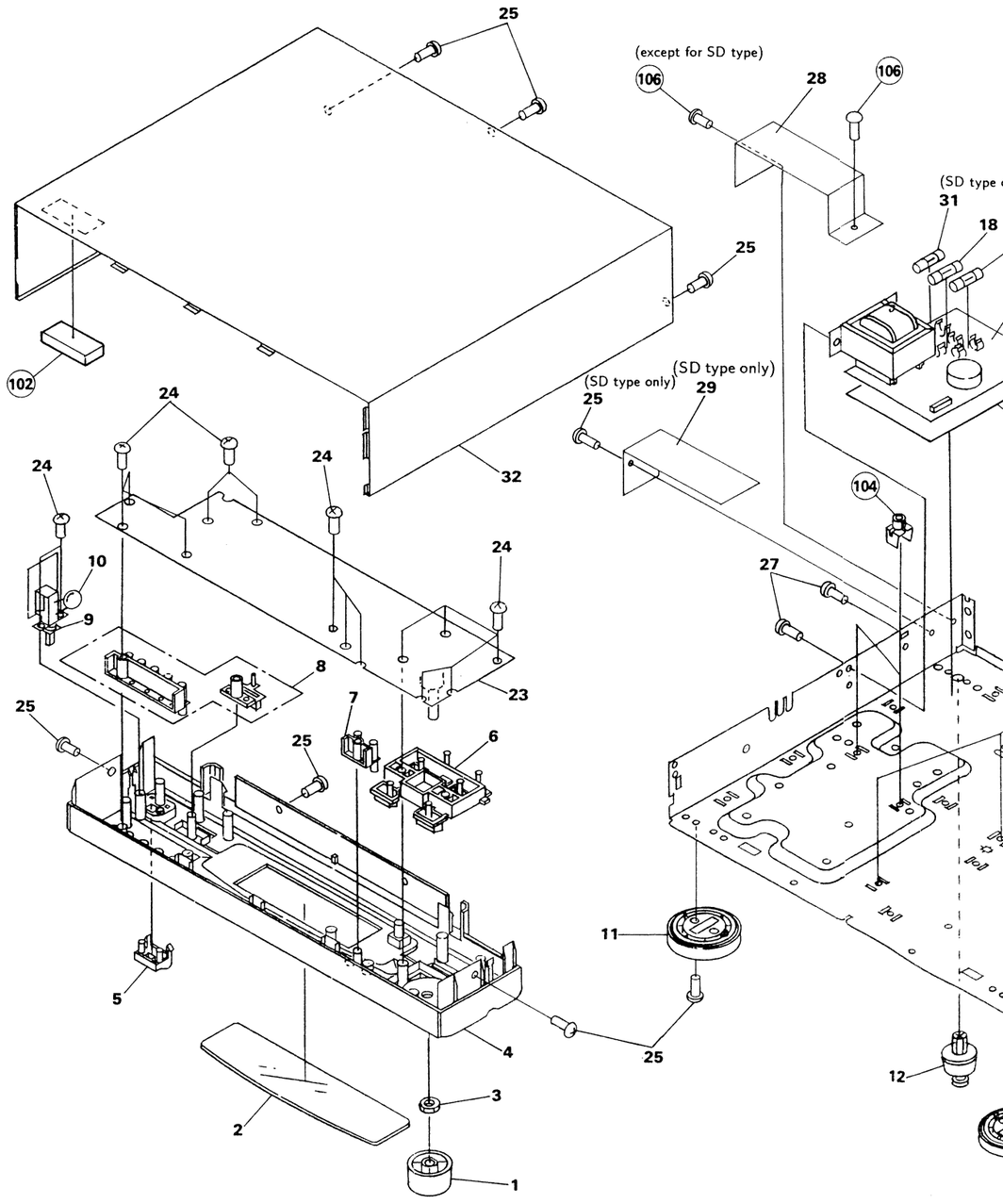
2. EXPLODED VIEWS AND PARTS LIST

NOTES :

- *The parts with an encircled number are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *Screws adjacent to ▼ marks on the product are used for disassembly.*

Mark	No.	Description	Parts No.
	1	ROTARY KNOB	AAA1011
	2	FL PANEL	AAK2253
	3	NUT	ABN1016
	4	FRONT PANEL	AMB1918
	5	POWER BUTTON	AAD2147
	6	IMAGE BUTTON	AAD2145
	7	BAND BUTTON	AAD2100
	8	PROGRAM BUTTON	AAD2146
⚠	9	PUSH SWITCH (S1)	ASG1035
⚠	10	CKA (C101 0.01/AC400V)	ACG1003
	11	FOOT ASSY(ABS)	RXA1448
	12	LEG ASSY(S)	AMR1937
	13	.....	
	14	CORD WITH PLUG	ADE1118
⚠	15	AC SOCKET 1−P	AKP−508
⚠	16	AC POWER CORD	ADG1102
⚠	17	STRAIN RELIEF	AEC−882
⚠	18	FUSE (FU3 T1A/250V)	AEK−508
⚠	19	FUSE(FU1 T2.5A/250V)	AEK−512
◉	20	TRANS ASS'Y	AWZ3826
◉	21	CENTER ASS'Y	AWZ3798
	22	DSP MOD.(FRONT ONLY) ASS'Y	AXQ1007
◉	23	FRONT ASS'Y	AWZ3797
	24	SCREW	BPZ26P080FMC
	25	SCREW	ABA−298
	26	SCREW	ABA1018
	27	SCREW (STEEL)	ABA1011
	28	BARRIER(PVC)	AEC1386
	29	BARRIER(PVC) (SD type only)	AEC1387
⚠	30	LINE VOLTAGE SELECTOR (SD type only)	AKX−507
⚠	31	FUSE(FU2 T2A/250V) (SD type only)	AEK−511
	32	BONNET CASE	ANE1324
	33	BARRIER(PVC)	AEC1392

Mark	No.	Description	Parts No.
	101	CHASSIS	ANA1160
	102	SPACER	AEC1201
	103	PCB MOULD	AMR1525
	104	PCB MOULD	AMR2115
	105	BINDER	AEP−215
	106	NYLON RIVET	AEC1160
	107	REAR PANEL	ANC1788



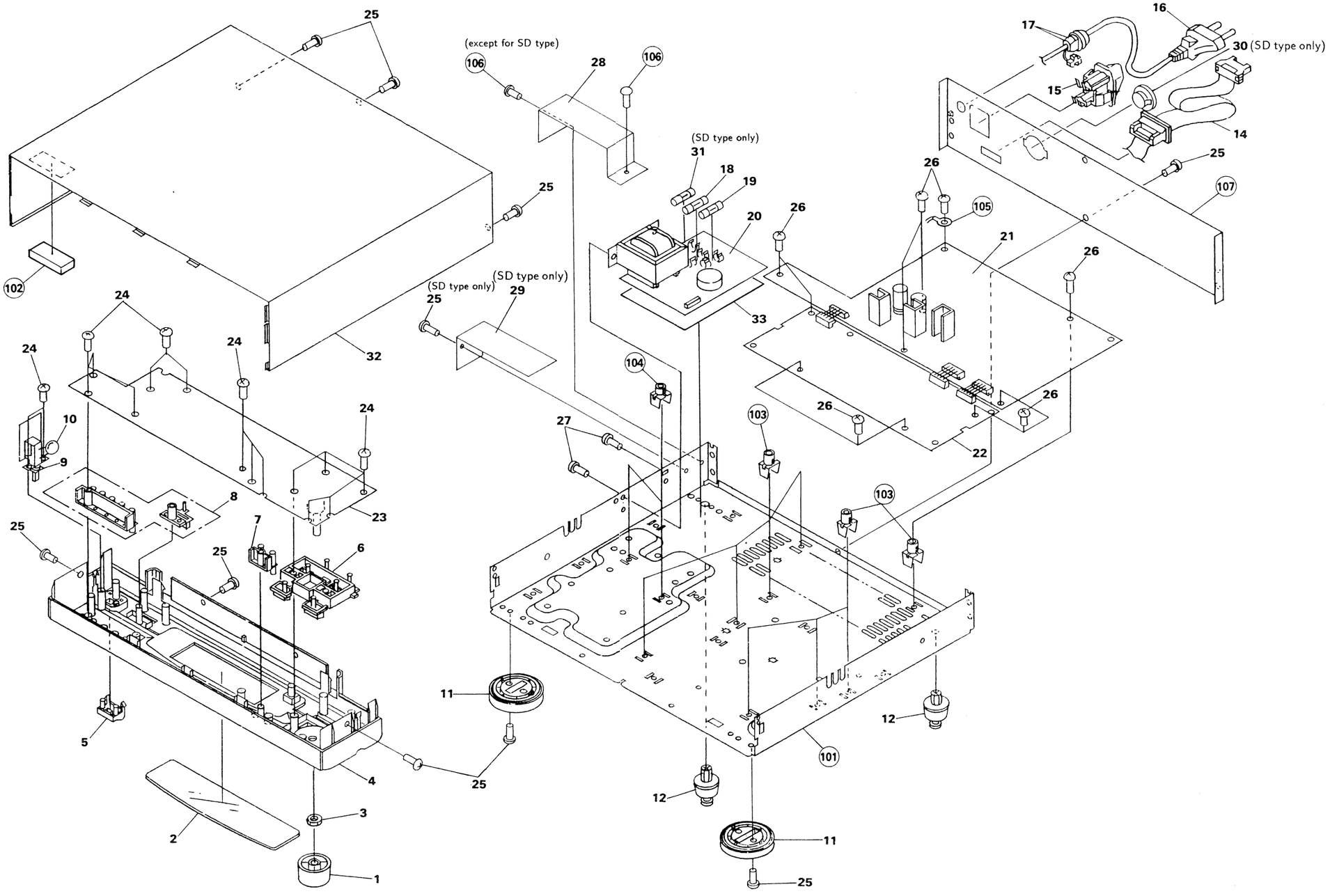
eplacing,

ilable.

o.

60
01
25
15
215

30
88



A

B

C

D

5

3. SCHEMATIC DIAGRAMS AND PCB CONNECTIONS DIAGRAMS

3.1 CENTER Ass'y, FRONT Ass'y AND TRANS Ass'y

1. RESISTORS :
Indicated in Ω, 1/4W, 1/6W and 1/8W, ±5% tolerance unless otherwise noted k ; kΩ, M ; MΩ, (F) ; ±1%, (G) ; ±2%, (K) ; ± 10%, (M) ; ±20% tolerance.

2. CAPACITORS :
Indicated in capacity (μF)/voltage(V) unless otherwise noted p ; pF.
Indication without voltage is 50V except electrolytic capacitor.

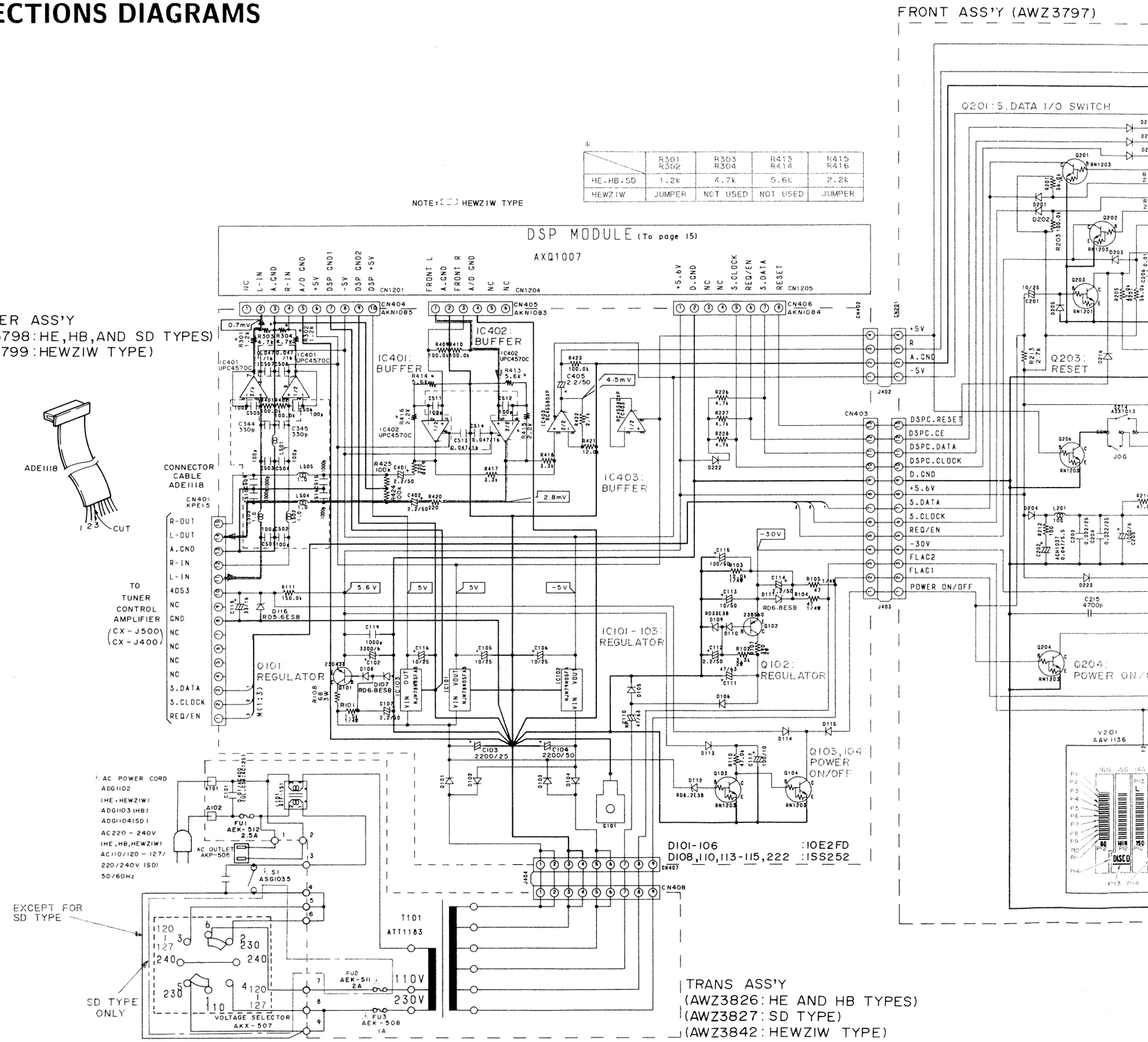
3. VOLTAGE, CURRENT :
; DC voltage (V) at no input signal unless otherwise noted.
⇦mA or ←mA ; DC current at no input signal unless otherwise noted.

4. OTHERS :
➔ ; Signal route.
⊘ ; Adjusting point
The ⚠ mark found on some component parts indicates the inportance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
※ marked capacitors and resistors have parts numbers.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

5. SWITCHES : (The underlined indicates the switch position)
FRONT ASS'Y

S201	SFC MODE
S202	PGM MODE
S203	MEMORY
S204	EFFECT
S205	SMART EQ.
S206	REC MODE
S207	STANDARD
S208	DISPLAY
S209	MILD
S210	SHARP
S211	WARM
S212	FREQ./IMAGE
S213	VIVID
S215	VOCAL CANCEL



\GRAMS

*	R301 R302	R303 R304	R413 R414	R415 R416
HE.HB.SD	1.2k	4.7k	5.6k	2.2k
HEWZIW	JUMPER	NOT USED	NOT USED	JUMPER

NOTE: HEWZIW TYPE

TYPES)

DSP MODULE (To page 15)

AXQ1007

CN1201 CN1204 CN1205

CN404 AKN1085 CN405 AKN1083 CN406 AKN1084

IC401: BUFFER

IC402: BUFFER

IC403: BUFFER

IC101-103: REGULATOR

Q101: REGULATOR

Q102: REGULATOR

Q103,104: POWER ON/OFF

D101-106 :10E2FD
D108,110,113-115,222 :ISS252

CN407 CN408

CONNECTOR CABLE ADE1118

CN401 KPE15

M(1:3)

AC OUTLET AKP-508

VOLTAGE SELECTOR AKX-507

T101 ATT1183

110V 230V

TRANS ASS'Y
(AWZ3826: HE AND HB TYPES)
(AWZ3827: SD TYPE)
(AWZ3842: HEWZIW TYPE)

FRONT ASS'Y (AWZ3797)

Q201: S.DATA I/O SWITCH

IC201: MPU

Q202: REQ/EN I/O SW.

Q203: RESET

Q204: POWER ON/OFF

IC202: SPECTRUM ANALYZER BPF

V201 AAV1136

B(1:15) A(1:16) E(1:9)

D201-205,207-219,223 :ISS252

S201-213,215 :ASG1034

S201	SFC MODE
S202	PCM MODE
S203	MEMORY
S204	EFFECT ON/OFF
S205	SMART EQ.
S206	REC MODE
S207	STANDARD
S208	DISPLAY
S209	MILD/RIGHT
S210	SHARP/UP
S211	WARM/DOWN
S212	FRQ/IMAGE
S213	VIVID
S215	AUDITION

DISCO CHURCH THEATER AREMA HALL

PROGRAM/SURROUND VIVID MILD SHARP WARM EFFECT

GEQ LEVEL

NOTE: □□ HEWZIW TYPE

CENTER ASS'Y
(AWZ3798:HE,HB AND SD TYPES)
(AWZ3799:HEWZIW TYPE)

HE,HB AND SD TYPE Jumper

TO TUNER CONTROL AMPLIFIER (CX-J500) (CX-J400)

ADE1118

1 2 3 CUT

ANP1529-B

AWZ 3798 3799

TRANS ASS'Y(AWZ3826:HE AND HB TYPES)
(AWZ3827:SD TYPE)
(AWZ3842:HEWZIW TYPE)

SD TYPE ONLY

VOLTAGE SELECTOR

FU1 T2.5A

FU2 T 2A

FU3 T 1A

EXCEPT FOR SD TYPE

110V 230V

AWZ 3826 3827 3842

T101

Q103 Q104 IC102 IC401 IC101 Q101 Q102 IC103 IC402 IC403

DSP MOD. (FRO

FRONT ASS'Y (AWZ3797)

DISPLAY STANDARD MODE REC MODE SPC MODE PGM MODE

AWZ 3797

VOICE CANCEL (DSP)

J403 J402

AEB1125

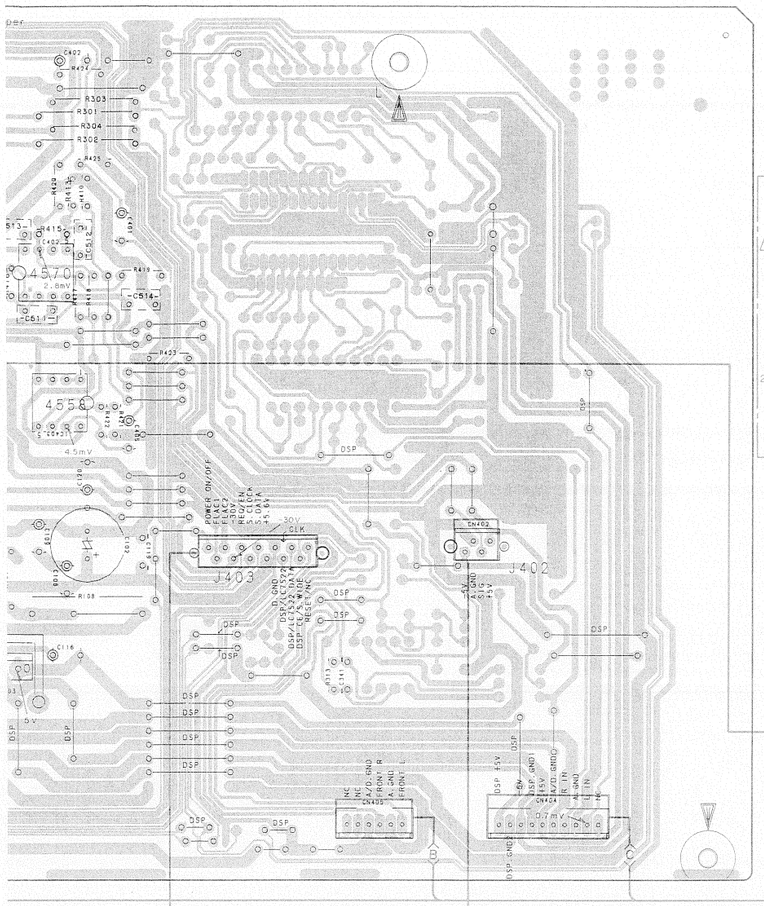
MEMORY (DSP) FREQ./MAGE (DSP)

VIVID MILD SHARP WARM

SMART EQ. EFFECT ON/OFF

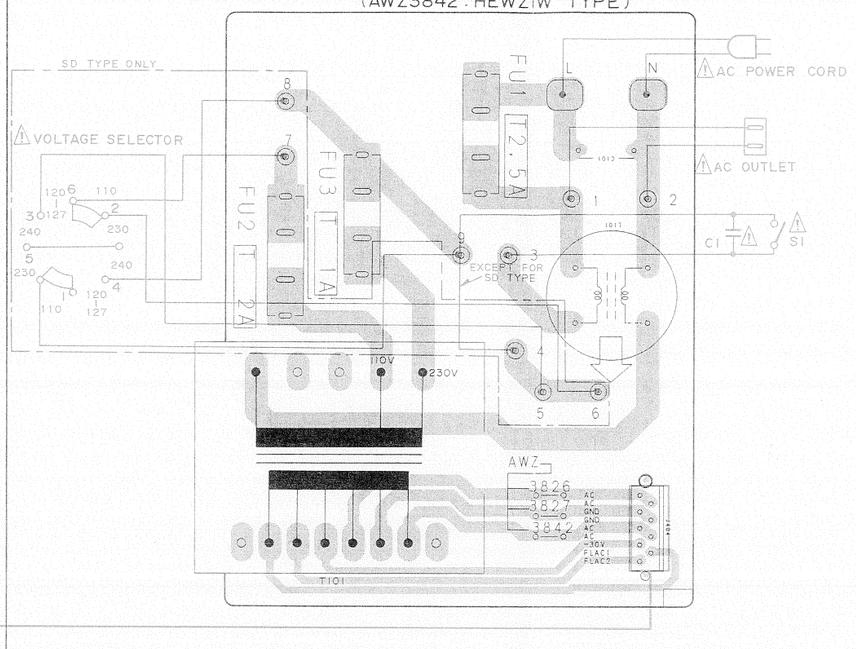
Q204 Q201 – Q203 IC201 Q205 IC202 Q206

IC1220 IC120



IC402
IC403

TRANS ASS'Y(AWZ3826:HE AND HB TYPES)
(AWZ3827:SD TYPE)
(AWZ3842:HEWZ/W TYPE)



NOTE

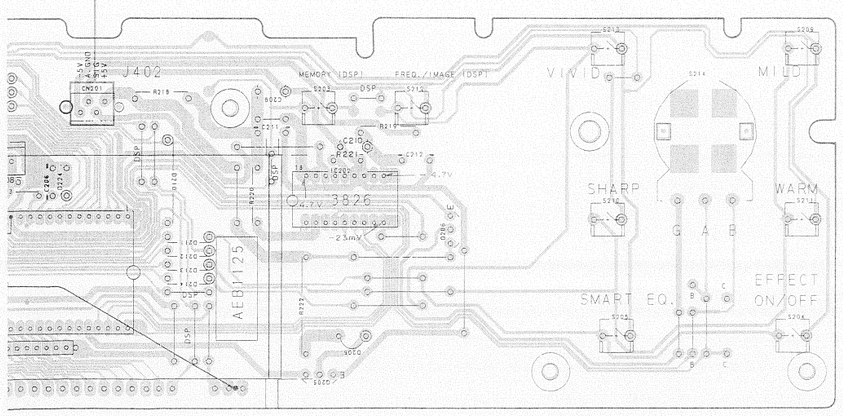
1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wirng symbols listed in the following Table.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504 (E)	Q504 or Q504	Transistor
Q215	Q215 or Q215	Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513	C513	Capacitor (Polarity)
C518	C518	Capacitor (Non-polarity)

Others

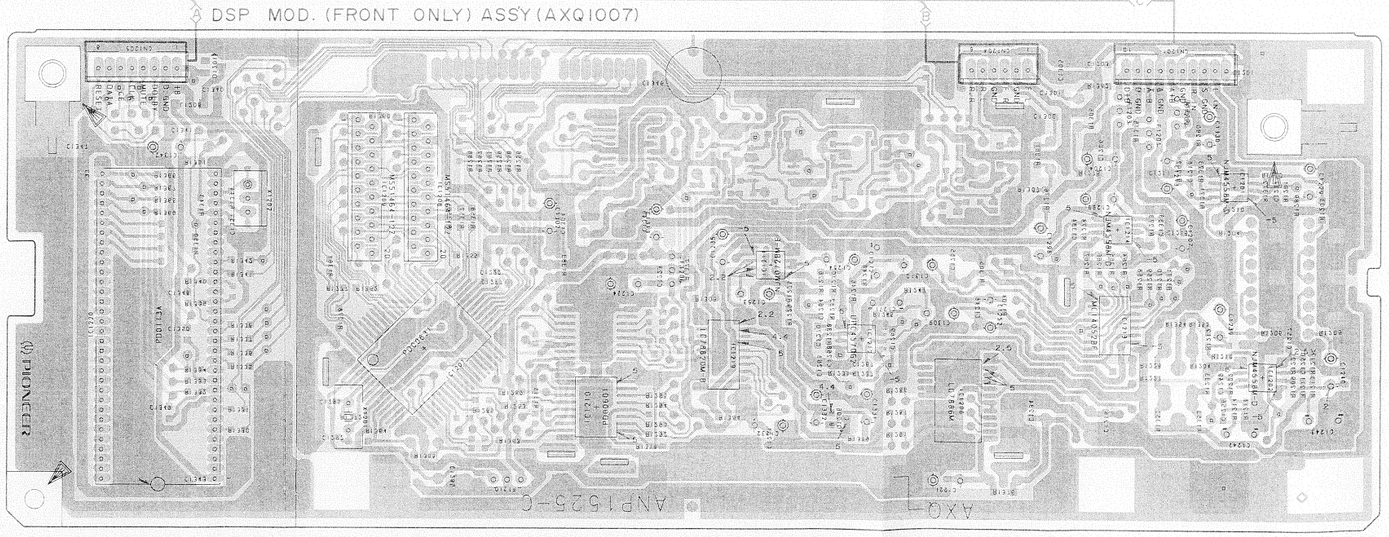
P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

3. The capactor terminal marked with ◎ (double circles) shows negative terminal.
4. The diode terminal marked with ◎ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

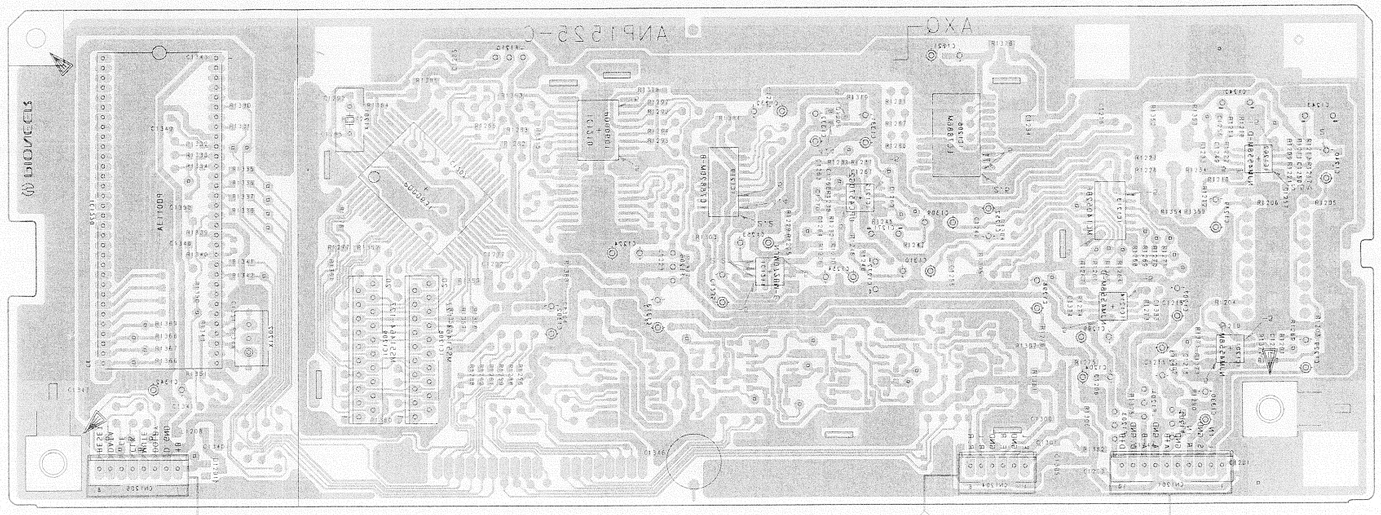


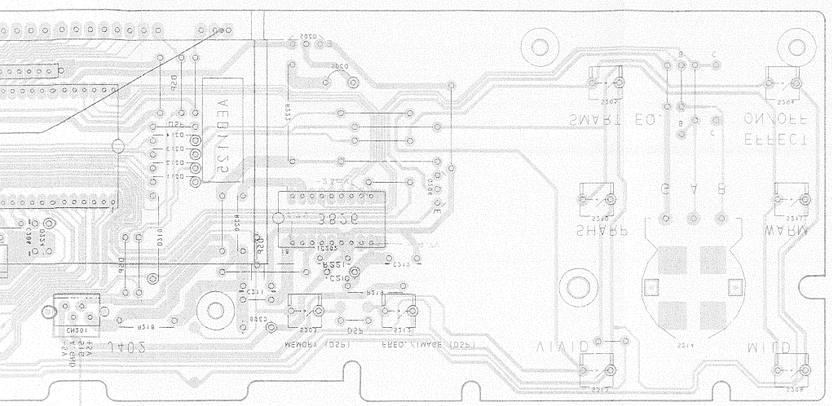
Q205 IC202 Q206

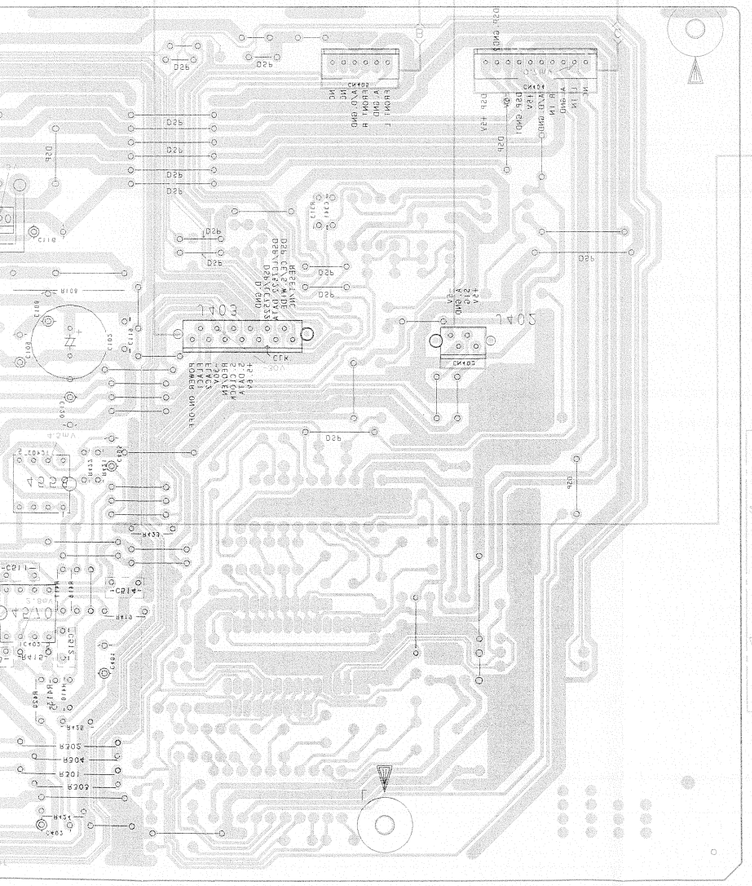
DSP MOD. (FRONT ONLY) ASSY(AXQ1007)

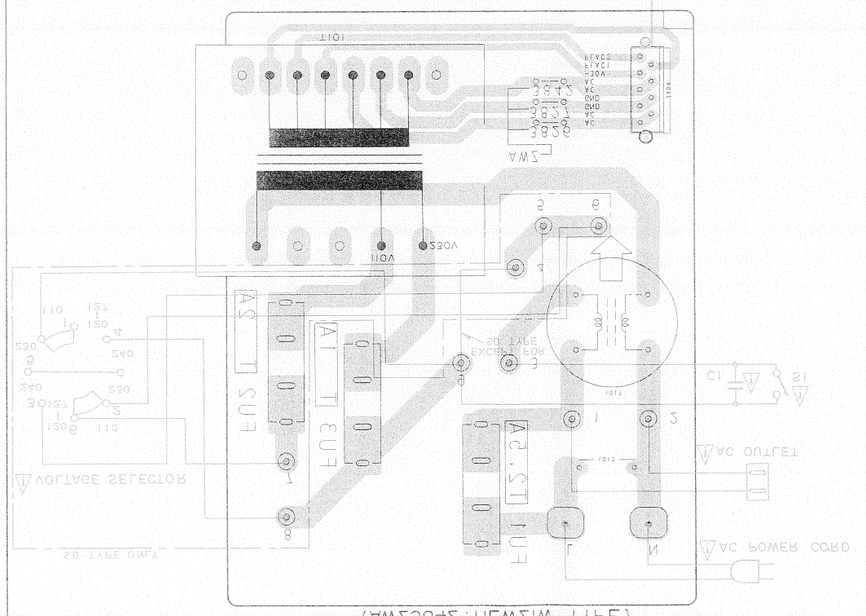


IC1220 IC1209 IC1208 IC1207 IC1210 IC1219 IC1211 IC1212 IC1206 IC1214 IC1213 IC1201 IC1202





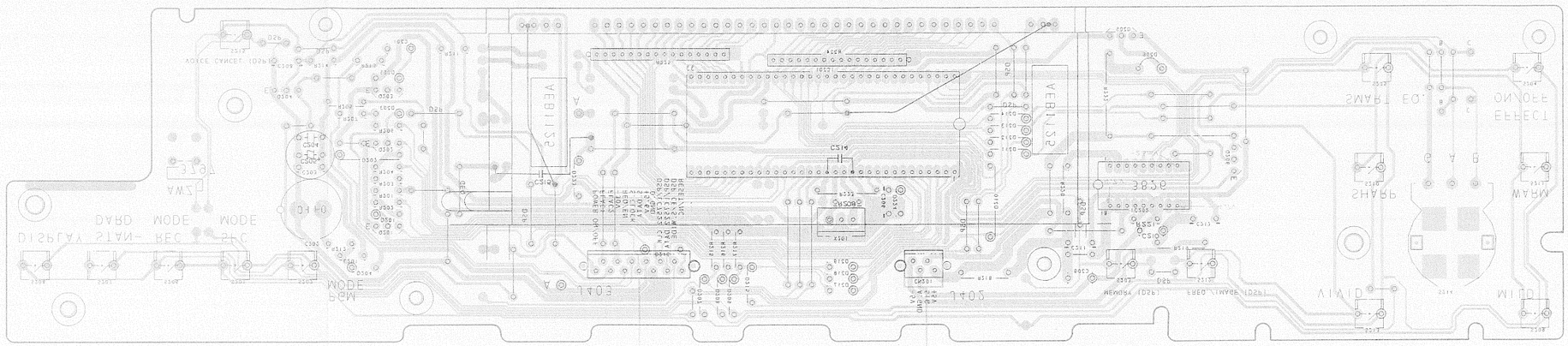


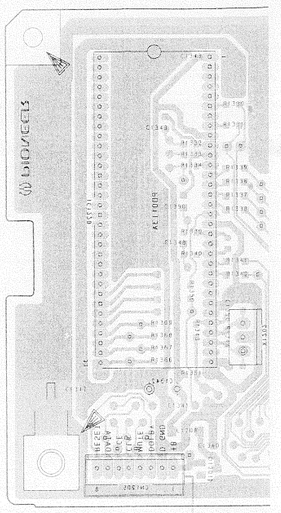


TRANS ASSY(AW23852:HE AND HB TYPES)
(AW23851:SD TYPE)
(AW23845:HEMZIM TYPE)

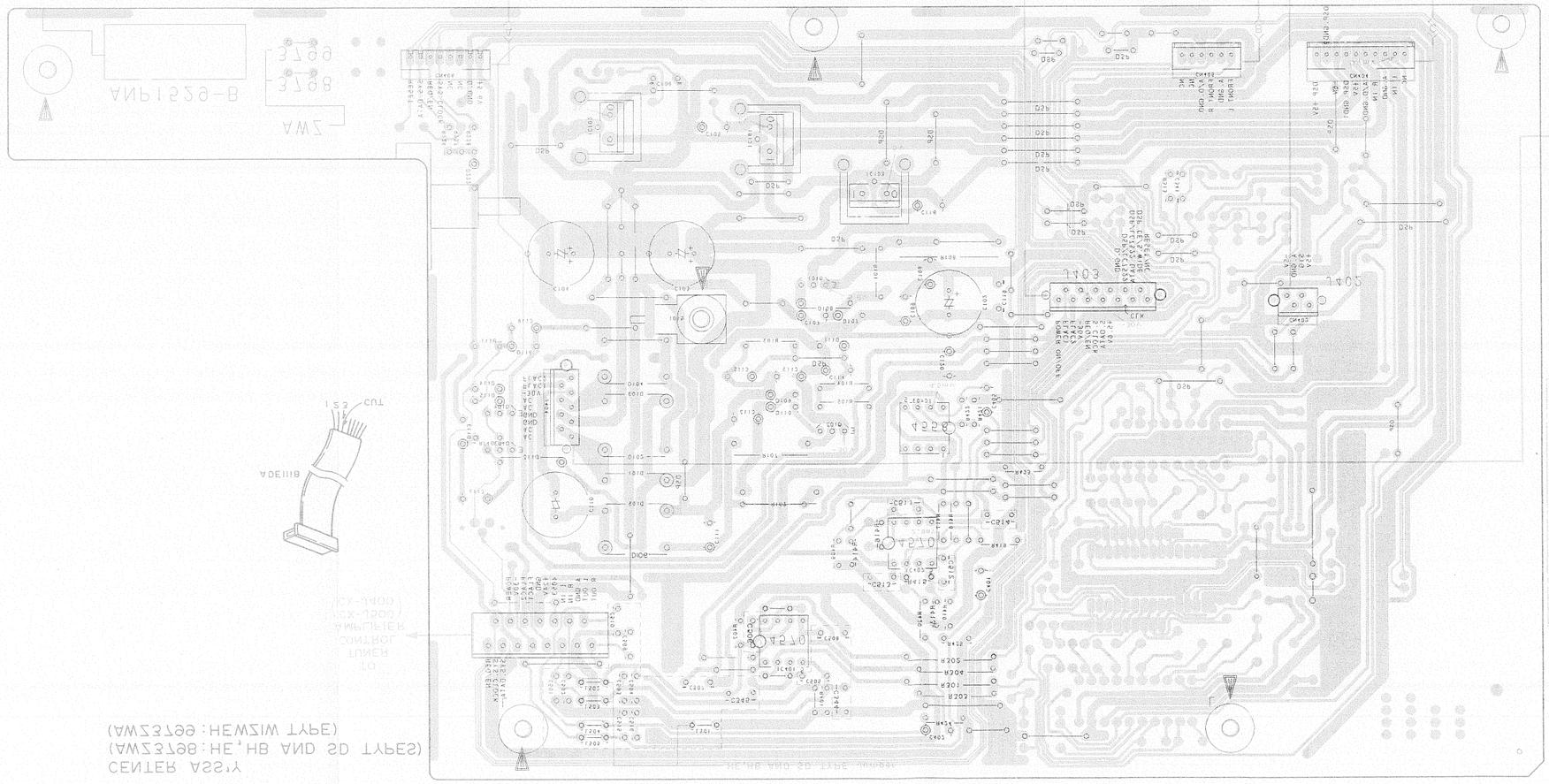
This P.C.B. connection diagram is viewed from the foil side.

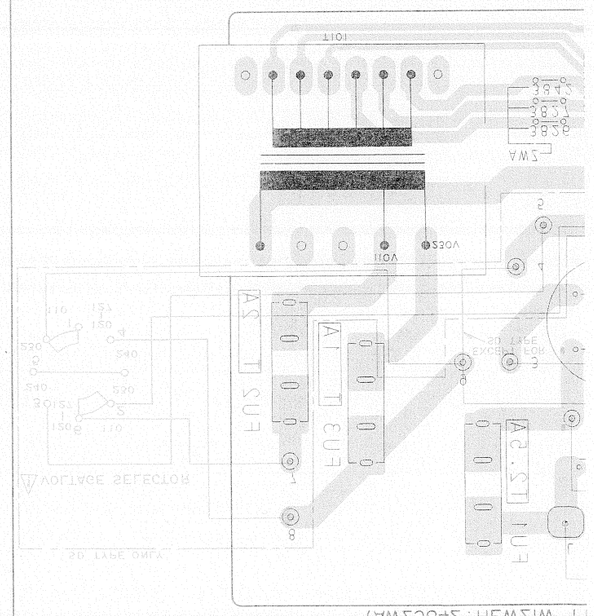
FRONT ASS'Y (AWZ2787)





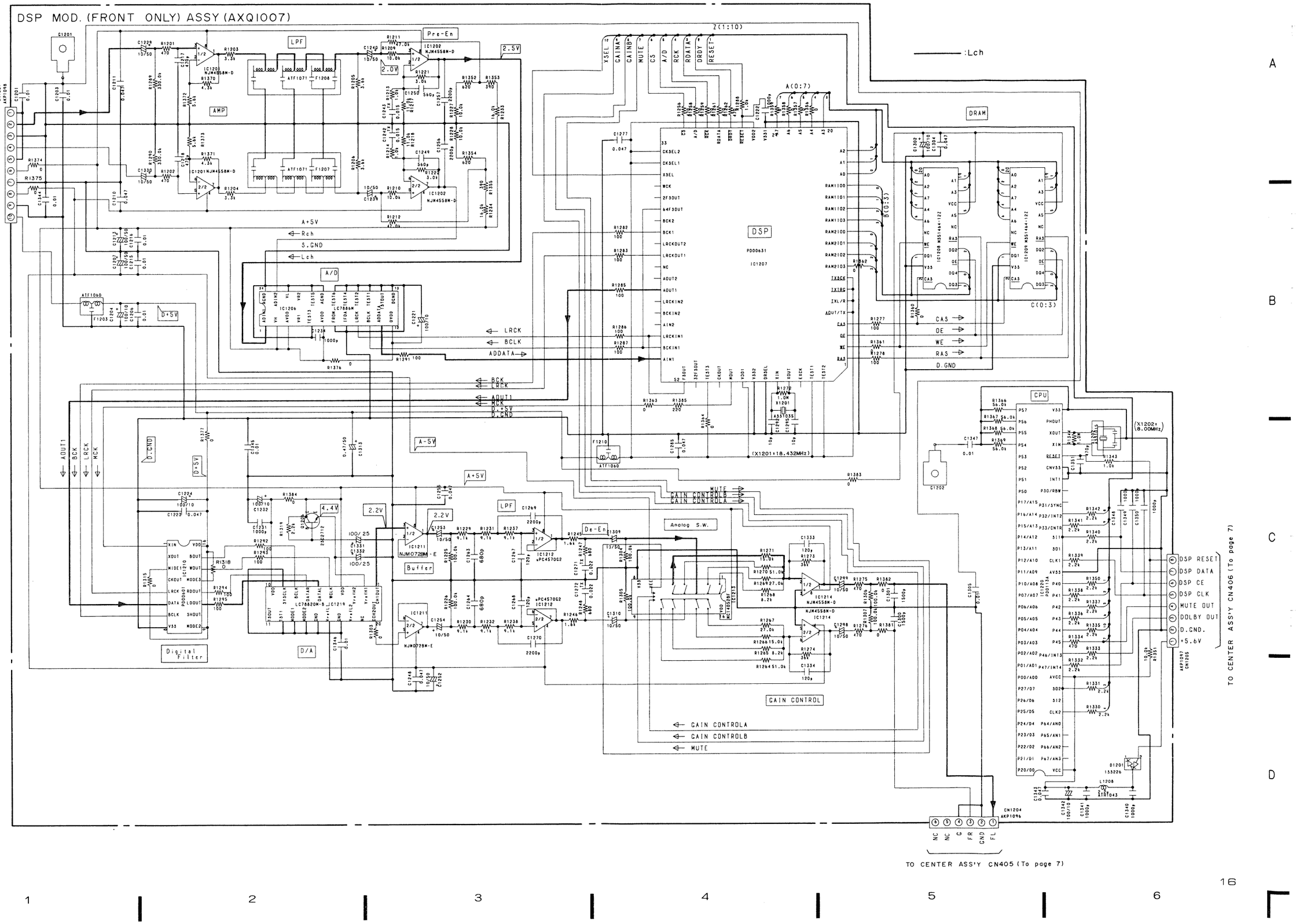
CENTER ASS'Y
(AWZ2798 : HE, HB AND SD TYPES)
(AWZ2799 : HEWZIW TYPE)





TRANS ASS'Y(AWZ2852:HE AND HE
(AWZ2857:SD TYPE)
(AWZ2845:HEWZIW T

3.2 DSP MOD. Ass'y



4. PCB PARTS LIST

NOTES :

- *Part without part number cannot be supplied.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 *When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).*

560Ω	*56×10¹ 561*	*RD1/4PS 5 6 1 J*
47kΩ	*47×10³ 473*	*RD1/4PS 4 7 3 J*
0.5Ω	*0R5*	*RD2H 0 R 5 K*
1Ω	*010*	*RD1P 0 1 0 K*

Ex.2 *When there are 3 effective digits (such as in high precision metal film resistors).*

5.62kΩ	*562×10¹ 5621*	*RD1/4SR 5 6 2 1 F*

Mark	No.	Description	Parts No.
LIST OF ASSEMBLIES			
◉		FRONT ASS'Y	AWZ3797
◉		CENTER ASS'Y	AWZ3798
◉		TRANS ASS'Y	AWZ3826
		DSP MOD. ASSY	AXQ1007
◉FRONT ASS'Y(AWZ3797)			
SEMICONDUCTORS			
	IC201	GEQ MPU IC	PDC005A
	IC202	GEQ−BPF IC	BA3826S
	Q201,202	TRANSISTOR	RN1203
	Q203	TRANSISTOR	RN1201
	Q204−206	TRANSISTOR	RN1203
	D201−205	DIODE	1SS252
	D206	LED(RED)	AEL1108
	D207−219	DIODE	1SS252
	D223	DIODE	1SS252
	D224	ZENER DIODE	RD5.6ESB
SWITCHES			
	S201−213	SWITCH (SFC MODE, PGM MODE, MEMORY EFFECT, SMART EQ., REC MODE STANDARD, DISPLAY, MILD, SHARP WARM, FREQ/IMAGE, VIVID,)	ASG1034
	S214	ROTARY ENCODER	ASX1013
	S215	SWITCH (VOCAL CANCEL)	ASG1034
COIL			
	L201	AXIAL INDUCTOR	LAU101K

Mark	No.	Description	Parts No.
CAPACITORS			
	C201	ELECTR.CAPACITOR	CEAS100M25
	C202	CEA (47000/5.5V)	ACH1037
	C203,204	CERAMIC CAPACITOR	CKPUYF223Z25
	C205	ELECTROLYTIC CAPACIT	CEAS102M6
	C206	CERAMIC CAPACITOR	CKCYF103Z50
	C208	CERAMIC CAPACITOR	CKDYB102K50
	C209,210	ELECTR.CAPACITOR	CEAS470M16
	C211,212	CERAMIC CAPACITOR	CKDYF473Z50
	C214,215	CERAMIC CAPACITOR	CKDYB472K50
RESISTORS			
	R218,219	CARBON FILM RESISTOR	RD1/4PM390J
	R222	CARBON FILM RESISTOR	RD1/4PM821J
	R224,225	RESISTOR ARRAY(100K)	RA15T104J
	Other resistors		RD1/8PM□□□J
OTHERS			
	V201	FL TUBE	AAV1136
	X201	CERAMIC RESONATOR (12MHz)	ASS1062
◉CENTER ASS'Y(AWZ3798)			
SEMICONDUCTORS			
	IC101	REGULATOR IC	NJM78M05FAS
	IC102	REGULATOR IC	NJM79M05FA
	IC103	REGULATOR IC	NJM78M05FAS
	IC401,402	IC	UPC4570C
	IC403	OP−AMP IC	RC4558DXP
	Q101	TRANSISTOR	2SD438
	Q102	TRANSISTOR	2SB560
	Q103,104	TRANSISTOR	RN1203
	D101−106	DIODE	10E2FD
	D107	ZENER DIODE	RD6.8ESB
	D108	DIODE	1SS252
	D109	ZENER DIODE	RD33ESB
	D110	DIODE	1SS252
	D111	ZENER DIODE	RD6.8ESB
	D112	ZENER DIODE	RD8.2ESB

Mark	No.	Description	Parts No.
	D113−115	DIODE	1SS252
	D116	ZENER DIODE	RD5.6ESB
	D222	DIODE	1SS252
CAPACITORS			
	C102	ELECTROLYTIC CAPACIT	CEAS332M6
	C103,104	ELECTROLYTIC CAPACIT	CEHAQ222M25
	C105,106	ELECTR.CAPACITOR	CEAS100M25
	C107	ELECTR.CAPACITOR	CEAS2R2M50
	C110	ELECTROLYTIC CAPACIT	CEANP470M63
	C111	ELECTROLYTIC CAPACIT	CEAS470M63
	C112	ELECTR.CAPACITOR	CEAS2R2M50
	C113	ELECTR.CAPACITOR	CEAS100M50
	C114	ELECTR.CAPACITOR	CEAS2R2M50
	C115	ELECTR.CAPACITOR	CEAS101M50
	C116	ELECTR.CAPACITOR	CEAS100M25
	C117	ELECTR.CAPACITOR	CEAS101M10
	C118	ELECTR.CAPACITOR	CEAS330M16
	C119	CERAMIC CAPACITOR	CKDYB102K50
	C120	ELECTR.CAPACITOR	CEAS220M50
	C401,402	ELECTR.CAPACITOR	CEAS2R2M50
	C405	ELECTR.CAPACITOR	CEAS2R2M50
RESISTORS			
	R101	CARBON FILM RESISTER	RD1/4PM152J
	R102	METAL OXIDE RESISTOR	RS2LMF332J
	R103	CARBON FILM RESISTOR	RD1/4PM123J
	R104,105	FUSLIBLE RESISTOR	RFA1/4PS470J
	R107	METAL OXIDE RESISTOR	RS2LMF391J
	R108	METAL OXIDE RESISTOR	RS3LMF680J
	Other resistors		RD1/8PM□□□J
OTHERS			
	CN401	CONNECTOR(15P)	KPE15
	CN404	10P PLUG	AKM1085
	CN405	6P PLUG	AKM1083
	CN406	8P PLUG	AKM1084
	SCREW		BBZ30P080FZK
◉TRANS ASS'Y(AWZ3826)			
FILTER, TRANSFORMER			
	L101	FILTER	ATF−151
⚠	T101	POWER TRANSFORMER	ATT1183
CAPACITORS			
	C101	CKA (0.01/AC400V)	ACG1003
DSP MOD. (FRONT ONLY) ASS'Y(AXQ1007)			
SEMICONDUCTORS			
	IC1201,1202	OP−AMP IC	NJM4558M
	IC1206	A/D CONVERTER	LC7886M
	IC1207	DSP IC	PD00631
	IC1208,1209	MEMORY IC	MS51464−12Z
	IC1210	DIGITAL FILTER	PD00601

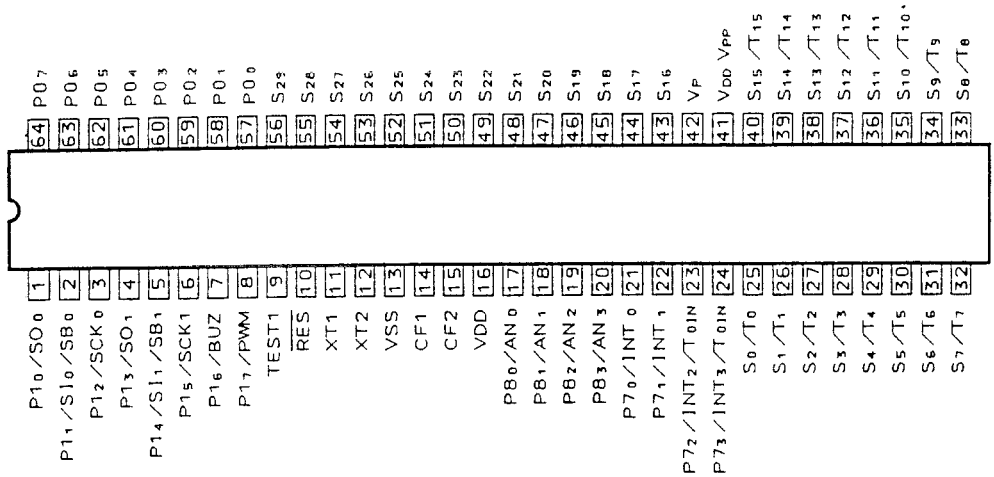
Mark	No.	Description	Parts No.
	IC1211	IC	NJM072BM
	IC1212	OP−AMP IC	UPC4570G2
	IC1213	LOGIC IC	MC14052BF
	IC1214	OP−AMP IC	NJM4558M
	IC1219	D/A CONVERTER	LC78820M
	IC1220	SYSTEM MPU	PD0113A
	Q1206	TRANSISTOR	2SC2712
	D1201	DIODE	1SS226
COILS, FILTERS			
	L1208	TIP COIL	ATH1043
	F1203	FILTER	ATF1060
	F1207,1208	FILTER	ATF1071
	F1210	FILTER	ATF1060
CAPACITORS			
	C1201	CHIP CAPACITOR	CKSQYF103Z50
	C1203	CHIP CAPACITOR	CKSYF103Z50
	C1204	ELECTR.CAPACITOR	CEAS101M10
	C1206	CHIP CAPACITOR	CKSQYF103Z50
	C1207	ELECTROLYTIC CAPACIT	CEXA101M50
	C1210,1211	CERAMIC CAPACITOR	CKSQYF473Z50
	C1213	ELECTROLYTIC CAPACIT	CEXA101M50
	C1215	CHIP CAPACITOR	CKSQYF103Z50
	C1216	CHIP CAPACITOR	CKSYF103Z50
	C1217	CHIP CERAMIC C.	CCSQCH471J50
	C1218	CHIP CAPACITOR	CCSCH471J50
	C1221	ELECTR.CAPACITOR	CEAS101M10
	C1222	CHIP CAPACITOR	CKSQYB102K50
	C1223	CERAMIC CAPACITOR	CKSQYF473Z50
	C1224	ELECTR.CAPACITOR	CEAS101M10
	C1229	ELECTR.CAPACITOR	CEAS100M50
	C1231	CHIP CAPACITOR	CKSQYB102K50
	C1232	ELECTROLYTIC CAPACIT	CEXA101M25
	C1234	CHIP CAPACITOR	CKSQYB102K50
	C1239,1240	ELECTR.CAPACITOR	CEAS100M50
	C1242,1243	AUDIO FILM CAPACITOR	CFTXA153J50
	C1248	CERAMIC CAPACITOR	CKSQYF473Z50
	C1249,1250	CERAMIC CAPACITOR	CCSQCH561J50
	C1252−1254	ELECTR.CAPACITOR	CEAS100M50
	C1255	CERAMIC CAPACITOR	CKSQYF473Z50
	C1256,257	CHIP CERAMIC C.	CCSCH222J50
	C1263,1264	CERAMIC CAPACITOR	CCSQCH681J50
	C1267,1268	CHIP CAPACITOR	CCSQCH121J50
	C1269,1270	CHIP CERAMIC C.	CCSCH222J50
	C1271,1272	AUDIO FILM CAPACITOR	CFTXA223J50
	C1277,1285	CERAMIC CAPACITOR	CKSQYF473Z50
	C1292,1295	CHIP CAPACITOR	CCSQCH100D50
	C1298,1299	ELECTR.CAPACITOR	CEAS100M50
	C1300,1301	CHIP CAPACITOR	CKSYB152K50
	C1302	ELECTR.CAPACITOR	CEAS101M10
	C1304	CERAMIC CAPACITOR	CKSQYF473Z50
	C1305	CHIP CAPACITOR	CKSYF103Z50
	C1309,1310	ELECTR.CAPACITOR	CEAS100M50
	C1313	ELECTR.CAPACITOR	CEASR47M50
	C1330	ELECTR.CAPACITOR	CEAS100M50

Mark	No.	Description	Parts No.
	C1331,1332	ELECTROLYTIC CAPACIT	CEXA101M25
	C1333,1334	CHIP CAPACITOR	CCSQCH121J50
	C1340,1341	CHIP CAPACITOR	CKSQYB102K50
	C1342	ELECTR.CAPACITOR	CEAS101M10
	C1343	CERAMIC CAPACITOR	CKSQYF473Z50
	C1344	CHIP CAPACITOR	CKSYF103Z50
	C1345−1347	CHIP CAPACITOR	CKSQYF103Z50
	C1348−1350	CHIP CAPACITOR	CKSYB102K50
	C1351	CHIP CERAMIC C.	CCSQCH471J50
RESISTORS			
	R1202	CHIP RESISTOR	RS1/8S471J
	R1203,1204	CHIP RESISTOR	RS1/8S332J
	R1226	CHIP RESISTOR	RS1/8S104J
	R1230	CHIP RESISTOR	RS1/8S912J
	R1246	CHIP RESISTOR	RS1/8S162J
	R1264	CHIP RESISTOR	RS1/8S513J
	R1265	CHIP RESISTOR	RS1/8S822J
	R1266	CHIP RESISTOR	RS1/8S153J
	R1267	CHIP RESISTOR	RS1/8S273J
	R1275,1276	CHIP RESISTOR	RS1/8S471J
	R1278	CHIP RESISTOR	RS1/8S101J
	R1282,1283	CHIP RESISTOR	RS1/8S101J
	R1303	CHIP RESISTOR	RS1/8S000J
	R1305	CHIP RESISTOR	RS1/8S104J
	R1335−1338	CHIP RESISTOR	RS1/8S222J
	R1341,1342	CHIP RESISTOR	RS1/8S222J
	R1356−1359	CHIP RESISTOR	RS1/8S000J
	R1362,1363	CHIP RESISTOR	RS1/8S000J
	R1374−1377	CHIP RESISTOR	RS1/8S000J
	R1381−1384	CHIP RESISTOR	RS1/8S000J
	R1385	CHIP RESISTOR	RS1/8S221J
	Other resistors		RS1/10S□□□J
OTHERS			
	X1201	CRYSTAL RESONATOR (18.432MHz)	ASS1035
	X1202	CRYSTAL RESONATOR (8.00MHz)	ASS1015
	CN1201	10P SOCKET	AKP1098
	CN1204	6P SOCKET	AKP1096
	CN1205	8P SOCKET	AKP1097

5. IC INFORMATION

■ IC201 (PDC005A) :
GEQ Control MPU

● **Pin Assignment (Top View)**



● **Pin Function**

Pin	Pin Name	I/O	Function
1	PI0	O	Enable output for DSP control MPU (*1)
2	PI1/SB0	O	Data output for DSP control MPU
3	PI2/SCK0	O	Clock output for DSP control MPU
4	PI3	O	System bus DATA OUT
5	PI4	I	System bus DATA IN
6	PI5	O	System bus CLOCK
7	PI6	O	System bus request
8	PI7	I	System bus enable
9	TEST1	O	Test pin (open)
10	$\overline{RES}$	I	Reset
11	XT1	I	Not used (pull up)
12	XT2	O	Not used (open)
13	V_{SS}	I	GND
14	CF1	I	Input for ceramic oscillator
15	CF2	O	Output for ceramic oscillator
16	V_{DD}		Power supply
17	P80	I	Key scan input (KI0)
18	P81	I	Key scan input (KI1)

(*1) Not used for some products.

Pin	Pin Name	I/O	Function
19	P82	I	Key scan input (KI2)
20	AN3	I	Analog input for Spectrum Analyzer
21	P70	I	Not used (pull up)
22	P71	I	AC input
23	P72	I	Rotary pulse encoder input
24	P73	I	Rotary pulse encoder input
25-40	T0-T15	O	FL Tube display grid output
41	V_{DD}VPP		Reference voltage for AD converter
42	VP		Minus power supply for FL tube display output
43	S16-S21	O	FL Tube display segment output/key scan output (KO0 to KO5)
44-56	S22-29	O	FL Tube display segment output
57	PO0	O	FUNCTION 4052 INH control
58	PO1	O	FUNCTION 4052 B control
59	PO2	O	FUNCTION 4052 A control
60	PO3	O	AI GEQ LED ON control
61	PO4	O	BA3826S A control
62	PO5	O	BA3826S B control
63	PO6	O	BA3826S C control
64	PO7	O	BA3826S RESET control

6. FOR HB AND SD TYPES

NOTES :

- *Parts without part number cannot be supplied.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*

CONTRAST OF MISCELLANEOUS PARTS

SP-J500/HB, SD types and SP-J500/HE type have the same construction except for the following :

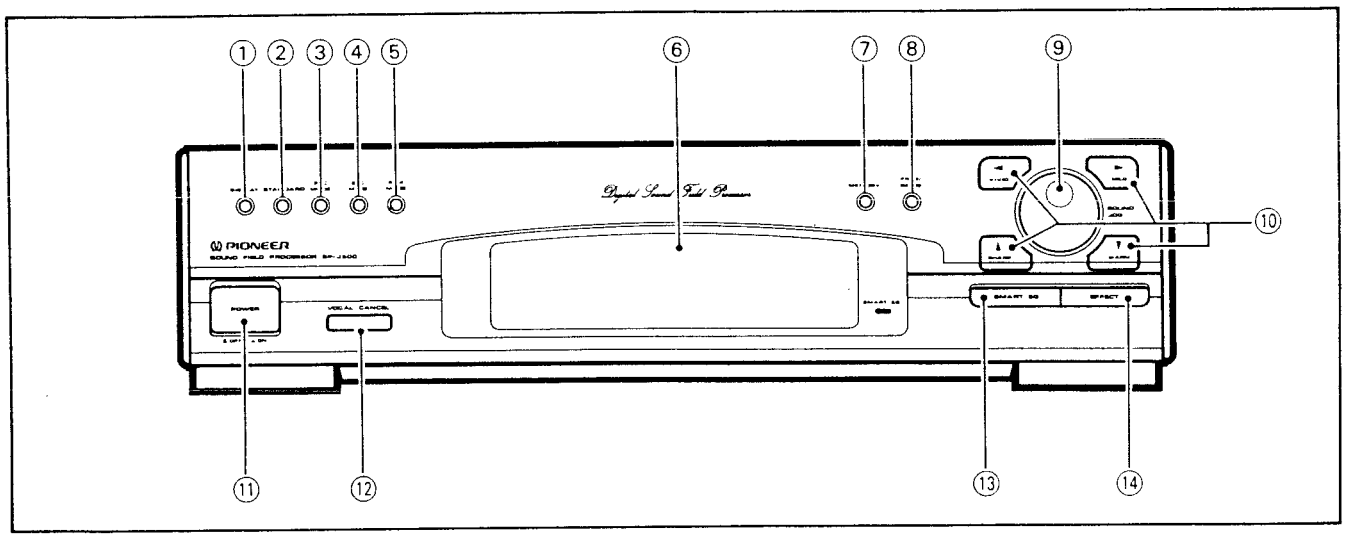
Mark	Symbol & Description	Part No.			Remarks
		SP-J500/ HE type	SP-J500/ HB type	SP-J500/ SD type	
◉	TRANS asembly	AWZ3826	AWZ3826	AWZ3827	
⚠	AC power cord	ADG1102	ADG1103	ADG1104	
⚠	AC socket 1−P	AKP-508	AKP-509	AKP−507	
⚠	Line voltage selector (AC 110, 120−127, 220, 240V)	.....	.....	AKX−507	*1
⚠	Fuse (FU2 T2A/250V)	.....	.....	AEK−511	*1
	Barrier (PVC)	.....	.....	AEC1387	*1

Note : Although TRANS assembly AWZ3827 and AWZ3826 are different in part number, they have the same service parts.

Note : As to the SCHEMATIC DIAGRM and PCB CONNECTIONS DIAGRAM of the HB and SD types, refer to those of the HE type.

Note : *1 ··· Refer to "2. EXPLODED VIEWS AND PARTS LIST".

7. PANEL FACILITIES



① DISPLAY button

Use to switch the display mode in the display section. Spectrum analyzer, graphic equalizer, and surround (two types) display is possible.

② STANDARD button

Use to return to the standard SFC mode effect settings.

③ REC MODE button

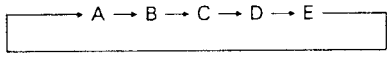
Use to recall previously memorized equalization patterns most suitable for recording tapes for use on a car stereo or headphone stereo.

④ SFC MODE button

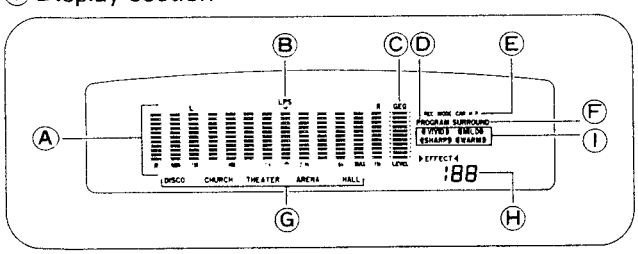
Use to recall DISCO, CHURCH, THEATER, ARENA, and HALL SFC modes.

⑤ PGM MODE button

Use to select sound fields you have created and memorized yourself. Each time you press the button, the sound field changes as follows.



⑥ Display section



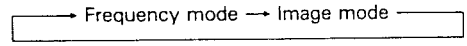
Ⓐ Spectrum analyzer, graphic equalizer, and character display.
Ⓑ Lights when LPS (Listening Point Selector) is ON.
ⓒ Displays input level.
Ⓓ Lights during recall of your original sound field settings from memory.
Ⓔ Lights when the REC MODE button is ON.
Ⓕ Lights when surround is ON.
Ⓖ The line under the mode selected with the SFC MODE button lights.
Ⓗ Displays delay time and effect level.
Ⓘ Displays image effect ◀, ▶.

⑦ MEMORY button

Use to memorize your own original sound field settings.

⑧ FREQ/IMAGE button

Each time you press the button, the mode indicated in the display section changes in the following order.



- **Frequency mode:**
Select this mode when you want to perform fine adjustments to the sound quality.
After you have finished adjusting the sound, the mode automatically switches to the Image mode after five seconds or more.
- **Image mode:**
Switch to this mode when you want to select an image effect for adjustment.

⑨ SOUND JOG

Use to increase and decrease the sound field effect, and when deciding on your listening position.

⑩ Image effect buttons

After selecting a sound field with the SFC MODE button, press these buttons when you want to add to the effect and then adjust with the SOUND JOG ⑨ dial.
When you select the Frequency mode with the FREQ/IMAGE button ⑧, use these buttons to perform fine adjustments to the sound quality.

⑪ POWER ON/OFF switch

This is the switch for electric power.

⑫ VOCAL CANCEL button

When set to ON, the sound volume of vocal sounds is lowerd. The SOUND JOG control can also be used to set the vocal volume to the lowest level.

⑬ SMART EQ (equalizer) button

When this button is ON, the unit automatically equalizes the sound to optimize the adjusted sound field to match the source.

⑭ EFFECT button

Press this button ON, and you can select sound fields and adjust effects. Press the button OFF, and sound from the source is reproduced without any effects.

8. SPECIFICATIONS

Graphic equalizer section

Equalizer band

Center frequencies..... 60 Hz, 150 Hz, 400 Hz, 1 kHz, 2.4 kHz, 6 kHz, 15 kHz

Variable range ..... ± 7 dB

Spectrum analyzer section

Center frequencies..... 60 Hz, 150 Hz, 400 Hz, 1 kHz, 2.4 kHz, 6 kHz, 15 kHz

Power Supply/Miscellaneous

Power requirements

U.K. model ..... a.c. 240 Volts ~ , 50/60 Hz

European model ..... a.c. 220 — 230 Volts ~ , 50/60 Hz

Multi-voltage model ..... AC 110 V/120 — 127 V/220 V/240 V (switchable), 50/60 Hz

Power consumption ..... 10 W

Dimensions ..... 360 (W) x 343 (D) x 90.5 (H) mm

Weight (without package) ..... 3.3 kg